

LITTLE COLORADO RIVER BASIN

09395900 BLACK CREEK NEAR LUPTON, AZ

LOCATION.--Lat 35°27'09", long 109°07'30", in E¹/₂NE¹/₄ sec.26, T.24 N., R.30 E. (unsurveyed), Apache County, Hydrologic Unit 15020006, in Navajo Indian Reservation, on downstream end of center bridge pier on State Highway 166, 7 mi upstream from West Fork, and 8 mi north-west of Lupton, and 16 mi south of Window Rock.

DRAINAGE AREA.--500 mi², approximately.

PERIOD OF RECORD.--August 1964 to December 1972, May 1974 to September 1982 (discontinued). Monthly discharge only, October 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 6,550 ft, from topographic map. Prior to May 1974 at site 160 ft downstream at same datum.

REMARKS.--Records poor. Small diversions above station for irrigation and stock water. Red Lake, near headwaters 35 mi upstream, was built in 1954, with capacity of 9,700 acre-ft, but silting may have reduced this amount.

AVERAGE DISCHARGE.--16 years, 8.26 ft³/s, 5,980 acre-ft/yr; median of yearly mean discharges, 7.2 ft³/s, 5,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,680 ft³/s Aug. 25, 1982, gage height, 9.58 ft, from rating curve extended above 410 ft³/s on basis of slope-area measurement at gage height, 9.35 ft; no flow for many days each year.

Annual peak discharges

Water year	Date	Annual peak discharge (ft ³ /s)	Discharge codes	Water year	Date	Annual peak discharge (ft ³ /s)	Discharge codes
1964	08-01-64	5,470		1974	08-05-74	1,600	
1965	07-29-65	3,370		1975	09-08-75	865	
1966	09-15-66	2,860		1976	07-27-76	830	
1967	07-16-67	1,630		1977	08-17-77	7,160	
1968	08-06-68	3,750		1978	03-01-78	72	
1969	07-19-69	4,280		1979	01-17-79	1,340	
1970	09-06-70	3,720		1980	02-20-80	1,740	
1971	09-29-71	3,090		1981	07-15-81	2,220	
1972	08-26-72	3,160		1982	08-25-82	7,680	
1973	10-07-72	2,420					

Basin characteristics

Main channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Forested area (percent)	Soil index	Mean annual precipitation (in)	Rainfall intensity, 24-hour	
						2-year (in)	50-year (in)
11.2	47.6	7,500	50.0	2.0	15.8	1.4	2.6

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MEAN MONTHLY AND ANNUAL DISCHARGES 1965-72, 1975-78, 1980-82

MONTH	MAXIMUM (FT3/S)	MINIMUM (FT3/S)	MEAN (FT3/S)	STAN- DARD DEVIA- TION (FT3/S)	COEFFI- CIENT OF VARI- ATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	12	0.00	2.5	4.4	1.7	2.6
NOVEMBER	4.8	0.00	0.86	1.2	1.4	0.9
DECEMBER	11	0.02	1.8	2.8	1.6	1.9
JANUARY	13	0.03	2.5	3.3	1.3	2.6
FEBRUARY	75	0.18	12	22	1.8	12.6
MARCH	27	0.00	8.3	9.2	1.1	8.6
APRIL	57	0.00	8.0	16	2.0	8.3
MAY	14	0.00	1.6	3.4	2.2	1.7
JUNE	9.4	0.00	0.71	2.4	3.4	0.7
JULY	81	0.03	15	21	1.4	15.8
AUGUST	124	0.23	29	34	1.2	29.9
SEPTEMBER	53	0.00	14	16	1.1	14.5
ANNUAL	19	0.71	8.0	5.7	0.70	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1966-72, 1976-78, 1981-82

PERIOD (CON- SECU- TIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20# 5%	50# 2%	100# 1%
1						
3						
7						
14						
30						
60	0.00	0.00	0.00	0.00	0.00	0.00
90	0.08	0.02	0.01	0.00	0.00	0.00
120	0.35	0.10	0.05	0.03	0.01	0.01
183	1.3	0.50	0.29	0.18	0.11	0.07

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1965-72, 1975-78, 1980-82

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1964-82

DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
2,550	4,440	5,880	7,880	9,480	11,200
WEIGHTED SKEW (LOGS) = -0.15					
MEAN (LOGS) = 3.40					
STANDARD DEV. (LOGS) = 0.29					

PERIOD (CON- SECU- TIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25# 4%	50# 2%	100# 1%
1	455	912	1,190	1,490	1,670	1,810
3	224	477	668	917	1,100	1,280
7	123	254	348	463	545	620
15	69	140	189	249	291	330
30	41	83	115	155	185	214
60	26	54	74	100	119	136
90	19	39	53	70	82	94

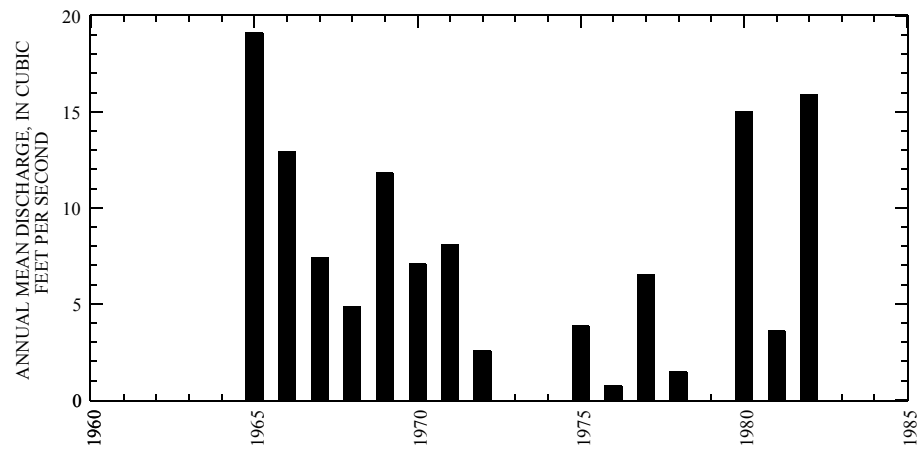
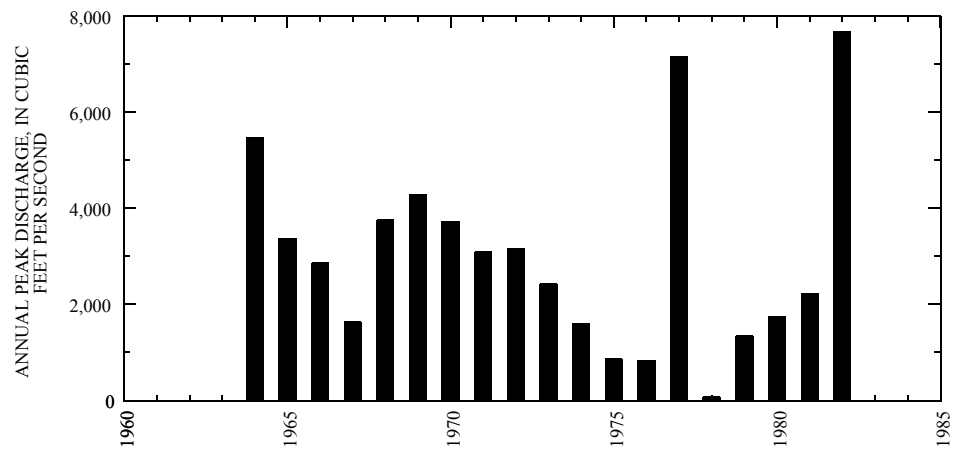
DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1965-72, 1975-78, 1980-82

DISCHARGE, IN FT3/S, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																	
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%	
156	32	11	5.0	3.4	1.3	0.52	0.21	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Reliability of values in column is uncertain, and potential errors are large.

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